Name:

at1113exam: Expand, factor, and solve quadratics (v337)

1. Solve the equation.

$$(8x - 3)(5x + 7) = 0$$

$x = \frac{3}{8}$ $x = \frac{-7}{5}$

2. Expand the following expression into standard form.

$$(6x + 5)(7x - 2)$$

$42x^2 - 12x + 35x - 10$

$42x^2 + 23x - 10$

3. Expand the following expression into standard form.

$$(7x + 6)^2$$

$49x^2 + 42x + 42x + 36$

$49x^2 + 84x + 36$

4. Expand the following expression into standard form.

$$(5x + 6)(5x - 6)$$

$25x^2 - 30x + 30x - 36$

$25x^2 - 36$

5. Factor the expression.

$$x^2 + 7x + 12$$

$$(x+3)(x+4)$$

6. Solve the equation.

$$11x^2 - 34x + 29 \;=\; 4x^2 + 2x - 3$$

$$7x^2 - 36x + 32 = 0$$
$$(7x-8)(x-4) = 0$$
$$x = \frac{8}{7} \qquad x = 4$$

7. Factor the expression.

$$49x^2 - 25$$

$$(7x-5)(7x+5)$$

8. Solve the equation with factoring by grouping.

$$12x^2 + 8x + 15x + 10 \;=\; 0$$

$$(4x+5)(3x+2) = 0$$
$$x = \frac{-5}{4} \qquad x = \frac{-2}{3}$$